

SRP-350 Ver.2



RECEIPT PRINTER



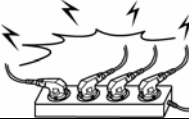











Operator's Manual





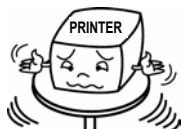



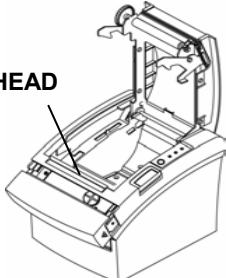




All specifications are subjected to change without notice

<http://www.samsungminiprinters.com>

Safety Precautions

In using the present appliance, please keep the following safety regulations in order to prevent any hazard or material damage.

 WARNING Violating following instructions can cause serious injury or death.	
<p>Do not plug several products in one multi-outlet.</p> <ul style="list-style-type: none">• This can provoke over-heating and a fire.• If the plug is wet or dirty, dry or wipe it before usage.• If the plug does not fit perfectly with the outlet, do not plug in.• Be sure to use only standardized multi-outlets. <p>PROHIBITE</p>  	<p>You must use only the supplied adapter.</p> <ul style="list-style-type: none">• It is dangerous to use other adapters.  <p>!</p>
<p>Do not pull the cable to unplug.</p> <ul style="list-style-type: none">• This can damage the cable, which is the origin of a fire or a breakdown of the printer. <p>PROHIBITE</p>  	<p>Keep the plastic bag out of children's reach.</p> <ul style="list-style-type: none">• If not, a child may put the bag on his head. <p>PROHIBITE</p>  
<p>Do not plug in or unplug with your hands wet.</p> <ul style="list-style-type: none">• You can be electrocuted. <p>PROHIBITE</p>  	<p>If you observe a strange smoke, odor or noise from the printer, unplug it before taking following measures.</p> <ul style="list-style-type: none">• Switch off the printer and unplug the set from the mains.• After the disappearance of the smoke, call your dealer to repair it. <p>TO UNPLUG</p>  
<p>Do not bend the cable by force or leave it under any heavy object.</p> <ul style="list-style-type: none">• A damaged cable can cause a fire. <p>PROHIBITE</p>  	

 WARNING Violating following instructions can cause slight wound or damage the appliance.	
Keep the desiccant out of children's reach. • If not, they may eat it.	Install the printer on the stable surface. • If the printer falls down, it can be broken and you can hurt yourself.
PROHIBITE  	PROHIBITE  
Use only approved accessories and do not try to disassemble, repair or remodel it for yourself. • Call your dealer when you need these services.	Do not touch the HEAD of printer with your hand. • This can burn your hand or deteriorate printing quality.
DISASSEMBLING PROHIBITED  	PROHIBITE  
Do not let water or other foreign objects in the printer. • If this happened, switch off and unplug the printer before calling your dealer.	Do not use the printer when it is out of order. This can cause a fire or an electrocution. • Switch off and unplug the printer before calling your dealer.
PROHIBITE  	TO UNPLUG  

Warning - U.S.

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Notice - Canada

This Apparatus complies with class "A" limits for radio interference as specified in the Canadian department of communications radio interference regulations.

Get appareil est conforme aux normes class "A" d'interference radio tel que specifier par ministre canadien des communications dans les reglements d'interference radio.

Caution

Some semiconductor devices are easily damaged by static electricity. You should turn the printer "OFF", before you connect or remove the cables on the rear side, in order to guard the printer against the static electricity. If the printer is damaged by the static electricity, you should turn the printer "OFF".

INTRODUCTION

The SRP-350, SRP-350S, SRP-350P and SRP-350U Roll Printer are designed for use with electronic instruments such as system ECR, POS, banking equipment, computer peripheral equipment, etc.

The main features of the printer are as follows:

1. High speed printing : 35.5(1/6" Feed) lines per second.
2. Low noise thermal printing.
3. RS-232(SRP-350), RS-485(SRP-350S), Parallel(SRP-350P), USB(SRP-350U)
4. The data buffer allows the unit to receive print data even during printing.
5. Peripheral units drive circuit enables control of external devices such as cash drawer.
6. Characters can be scaled up to 64 times compared to it's original size.
7. Bar code printing is possible by using a bar code command.
8. Different print densities can be selected by DIP switches.

Please be sure to read the instruction in this manual carefully before using your new SRP-350/SRP-350P.

NOTE : The socket-outlet shall be near the equipment and it shall be easy accessible.

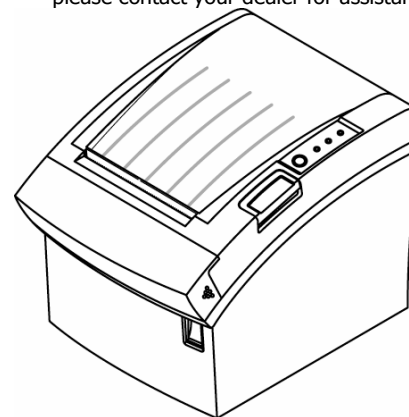
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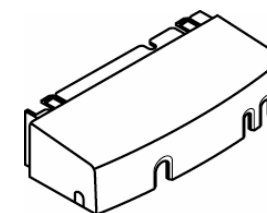
Chapter 1. Setting Up the Printer

1-1. Unpacking

Your printer box should include these items. If any items are damaged or missing, please contact your dealer for assistance.



SRP-350/350P



Cover Cable



Roll Paper



Operator's manual



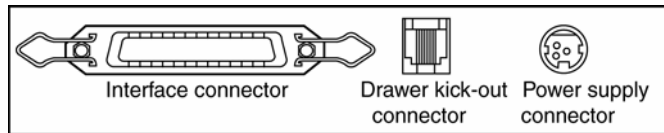
AC Adapter



Power Code

1-2. Connecting the Cables

You can connect up the three cables to the printer. They all connect to the connector panel on the back of the printer, which is shown below:

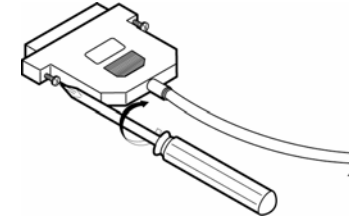


Notes : Before connecting any of the cables, make sure that both the printer and the host are turned off.

1-3. Connecting the computer

You need an appropriate interface cable.

1. Plug the cable connector securely into the printer's interface connector.
2. Tighten the screws on both sides of the cable connector.



3. Attach the other end of the cable to the computer.

1-4. Connecting the Drawer

WARNING:

Use a drawer that matches the printer specification. Using an improper drawer may damage the drawer as well as the printer.

CAUTION:

Do not connect a telephone line to the drawer kick-out connector; otherwise the printer and the telephone line may be damaged.

Plug the drawer cable into the drawer kick-out connector on the back of the printer next to the power supply connector.

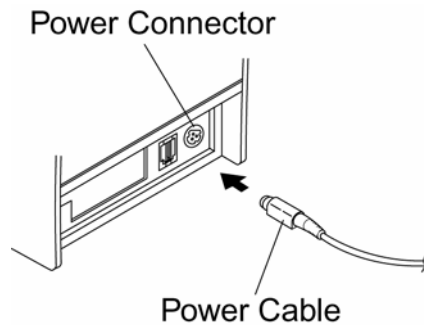
1-5. Connecting the Power Supply

CAUTIONS:

When connecting or disconnecting the power supply from the printer, make sure that the power supply is not plugged into an electrical outlet. Otherwise you may damage the power supply or the printer.

If the power supply's rated voltage and your outlet's voltage do not match, contact your dealer for assistance. Do not plug in the power cord. Otherwise, you may damage the power supply or the printer.

1. Make sure that the printer's power switch is turned off, and the power supply's power cord is unplugged from the electrical outlet.
2. Check the label on the power supply to make sure that the voltage required by the power supply matches that of your electrical outlet.
3. Plug in the power supply's cable as shown below. Notice that the flat side of the plug faces down.

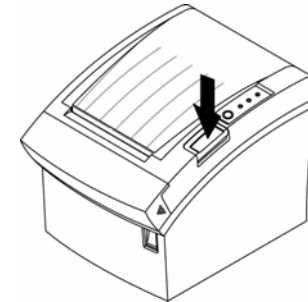


Notes : To remove the DC cable connector, make sure that the power supply's power cord is unplugged; then grasp the connector at the arrow and pull it straight out.

1-6. Installing or Replacing the Paper Roll

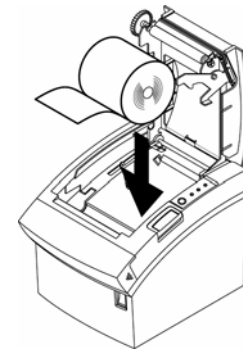
Notes : Be sure to use paper rolls that meet the specifications. Do not use paper rolls that have the paper glued to the core because the printer cannot detect the paper end correctly.

1. Make sure that the printer is not receiving data; otherwise, data may be lost.
2. Open the paper roll cover by pressing the cover-open button.

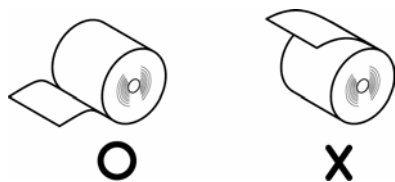


Notes : Do not open the print cover while the printer is operating. This may damage the printer.

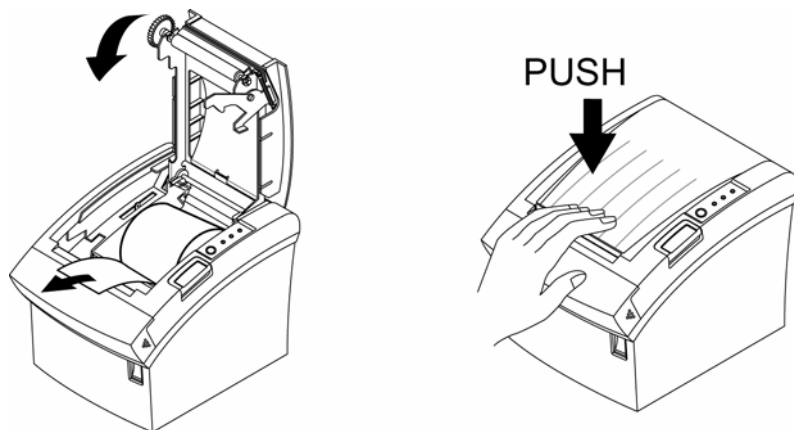
3. Remove the used paper roll core if there is one.
4. Insert the paper roll as shown.



5. Be sure to note the correct direction that the paper comes off the roll.

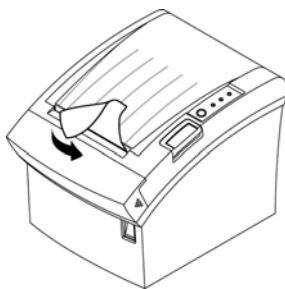


6. Pull out a small amount of paper, as shown. Then close the cover.



Notes : When closing the cover, press the center of printer cover firmly to prevent paper miss-loading

7. Tear off the paper as shown.

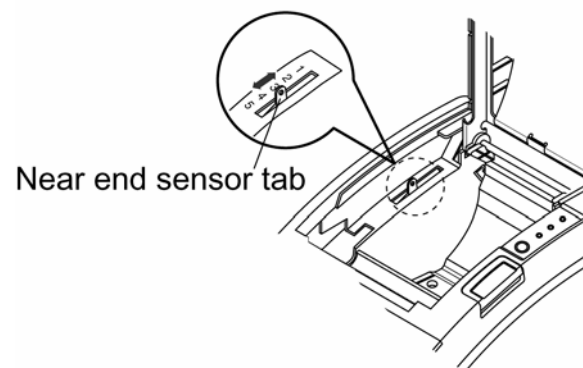


1-7. Adjustments and Settings

The SRP-350 is set up at the factory to be appropriate for almost all users. It does, however, offer some settings for users with special requirements.

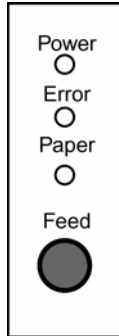
It has DIP switches that allow you to change communication settings, such as handshaking and parity check, as well as print density.

The SRP-350 also has a near-end sensor for the paper. This can give you a warning when the paper is almost out. If you find that there is not enough paper remaining on the roll when the near-end sensor is triggered, you can change the near-end sensor setting. Rotate the near end sensor tab at front or rear position. (See the below figure)



1-8. Using the Printer

Control Panel



Button

The button can be disabled by the ESC c 5 command.

Press the FEED button once to advance paper one line. You can also hold down the FEED button to feed paper continuously.

Panel lights

POWER

The POWER light is on whenever the printer is on.

ERROR

This indicates an error.

PAPER OUT

This light indicates the near end of the paper roll. Install a new paper roll and the printer will continue printing.

When the light blinks, it indicates the self-test printing standby state or macro execution Standby state when the macro execution command is used.

Serial Interface(RS-232C, RS-485) Specification

DIP Switch Set 1 Functions

SW	FUNCTION	ON	OFF	DEFAULT
1	Auto Line Feed	Always Enabled	Always Disabled	OFF
2	Reserved	-	-	OFF
3	Handshaking	XON/OFF	DTR/DSR	OFF
4	Word length	7 bits	8 bits	OFF
5	Parity check	Yes	No	OFF
6	Parity selection	EVEN	ODD	OFF
7	Baud rate selection	Refer to the Following Table		ON
8				OFF

Baud rate selection

Transmission speed	SW – 7	SW – 8
2400 baud	ON	ON
4800 baud	OFF	ON
9600 baud	ON	OFF
19200 baud	OFF	OFF

Dip Switch Set 2 Functions

SW	FUNCTION	ON	OFF	DEFAULT
1	Emulation	STAR	EPSON	OFF
2	Reserved	-	-	-
3	Reserved	-	-	-
4	Reserved	-	-	-
5	Select Print Density	Refer to the Following Table		OFF
6				OFF
7	Reserved	-	-	-
8	Reserved	-	-	-

Print Density

Print Density	SW - 5	SW – 6
1 (Light)	ON	ON
2	OFF	OFF
3	ON	OFF
4 (Dark)	OFF	ON

Parallel/USB Interface Specification

Dip Switch Set 1 Functions

SW	FUNCTION	ON	OFF	DEFAULT
1	Auto Line Feed	Always Enabled	Always Disabled	OFF
2	Reserved	-	-	OFF
3	Reserved	-	-	OFF
4	Reserved	-	-	OFF
5	Reserved	-	-	OFF
6	Reserved	-	-	OFF
7	Reserved	-	-	OFF
8	Reserved	-	-	OFF

Dip Switch Set 2 Functions

SW	FUNCTION	ON	OFF	DEFAULT
1	Emulation	STAR	EPSON	OFF
2	Reserved	-	-	-
3	Reserved	-	-	-
4	Reserved	-	-	-
5	Select Print Density	Refer to the Following Table		OFF
6				OFF
7	Reserved	-	-	-
8	Reserved	-	-	-

Print Density

Print Density	SW - 5	SW - 6
1 (Light)	ON	ON
2	OFF	OFF
3	ON	OFF
4 (Dark)	OFF	ON

Chapter 2. Hexadecimal Dumping

This feature allows experienced users to see exactly what data is coming to the printer. This can be useful in finding software problems. When you turn on the hexadecimal dump function, the printer prints all commands and data in hexadecimal format along with a guide section to help you find specific commands.

To use the hexadecimal dump function, follow these steps:

1. After you make sure that the printer is off, open the cover.
2. Turn on the printer, while holding down the FEED button.
3. Close the cover, then the printer enters the hexadecimal dump mode.
4. Run any software program that sends data to the printer. The printer will print all the codes it receives in a two-column format. The first column contains the hexadecimal codes and the second column gives the ASCII characters that corresponds to the codes.

```
1B 21 00 1B 26 02 40 40 40 40      . ! . . & . @ @ @ @
02 0D 1B 44 0A 14 1E 28 28 28      . . . D . . . ( ( (
00 01 0A 41 0D 42 0A 43 43 43      . . . A . B . C C C
```

- A period (.) is printed for each code that has no ASCII equivalent.
- During the hex dump, all commands except **DLE EOT** and **DLE ENQ** are disabled.

5. When the printing finishes, turn off the printer.
6. Turn on the printer and then the hexadecimal mode is off.

Chapter 3. The self test

The self-test checks whether the printer has any problems. If the printer does not function properly, contact your dealer. The self-test checks the following;

1. Make sure paper roll has been installed properly.
2. Turn on the power while holding down the FEED button. The self-test begins.
3. The self-test prints the current printer status, which provides the control ROM version and the DIP switch setting.
4. After printing the current printer status, self-test printing will print the following, and pause (The PAPER LED light blinks).

Self-test printing.
Please press the FEED button

5. Press the FEED button to continue printing. The printer prints a pattern using the built-in character set.
6. The self-test automatically ends and cuts the paper after printing the following.

***** COMPLETED *****

The printer is ready to receive data as soon as it completes the self-test.

Chapter 4. Code Table

The following pages show the character code tables. To find the character corresponding to a hexadecimal number, count across the top of the table for the left digit and count down the left column of the table for the right digit. For example, 4A = J.

HEX	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
HEX	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
0	0000	NUL	DLE	SP	0	@	P	p	C	E	a	z	L	±	α	≡
1	0001	XON	!	1	A	Q	a	q	U	æ	ı	ı	ı	ı	β	±
2	0010		"	2	B	R	b	r	e	æ	ö	ı	ı	ı	ı	±
3	0011	XOFF	#	3	C	S	c	s	a	ı	ı	ı	ı	ı	ı	ı
4	0100	DOT	\$	4	D	T	d	t	ä	ö	ı	ı	ı	ı	ı	ı
5	0101	ENQ	%	5	E	U	e	u	ä	ö	ı	ı	ı	ı	ı	ı
6	0110		&	6	F	V	f	v	ä	ı	ı	ı	ı	ı	ı	ı
7	0111		'	7	G	W	w	w	ı	ı	ı	ı	ı	ı	ı	ı
8	1000	BS	CAN	8	H	X	h	x	ı	ı	ı	ı	ı	ı	ı	ı
9	1001	HT	)	9	I	Y	i	y	ı	ı	ı	ı	ı	ı	ı	ı
A	1010	LF	*	A	J	Z	j	z	ı	ı	ı	ı	ı	ı	ı	ı
B	1011	ESC	+	B	K	[	k	[	ı	ı	ı	ı	ı	ı	ı	ı
C	1100	FF	FS	C	L	\	l	ı	ı	ı	ı	ı	ı	ı	ı	ı
D	1101	CR	GS	D	M	]	m	ı	ı	ı	ı	ı	ı	ı	ı	ı
E	1110		>	E	N	^	n	ı	ı	ı	ı	ı	ı	ı	ı	ı
F	1111		?	F	O	_	o	ı	ı	ı	ı	ı	ı	ı	ı	ı

	HEX	8	9	A	B	C	D	E	F
HEX	BIN	1000	1001	1010	1011	1100	1101	1110	1111
0	0000	Ç	É	Á	⌘	⌘	ø	Ó	—
		128	144	160	176	192	208	224	240
1	0001	ü	æ	í	⌘	⌘	ð	β	±
		129	145	161	177	193	209	225	241
2	0010	é	Æ	ó	⌘	⌘	Ê	Ô	—
		130	146	162	178	194	210	226	242
3	0011	ã	õ	ú	⌘	⌘	Ë	Ö	‡
		131	147	163	179	195	211	227	243
4	0100	ä	ö	ñ	⌘	⌘	È	Ø	
		132	148	164	180	196	212	228	244
5	0101	à	ò	ñ	Á	+	ı	Ö	§
		133	149	165	181	197	213	229	245
6	0110	á	û	â	Ä	ä	í	μ	÷
		134	150	166	182	198	214	230	246
7	0111	ç	ù	œ	Å	Ä	İ	Þ	•
		135	151	167	183	199	215	231	247
8	1000	ê	ÿ	ç	⌘	⌘	Ï	Ð	°
		136	152	168	184	200	216	232	248
9	1001	ë	ö	⌘	⌘	⌘	⌘	Ú	•
		137	153	169	185	201	217	233	249
A	1010	è	ü	⌘	⌘	⌘	⌘	Û	•
		138	154	170	186	202	218	234	250
B	1011	ï	ø	‡	⌘	⌘	⌘	Ü	ı
		139	155	171	187	203	219	235	251
C	1100	î	£	‡	⌘	⌘	⌘	Ý	ˆ
		140	156	172	188	204	220	236	252
D	1101	ì	ø	ı	⌘	⌘	⌘	Ÿ	ˆ
		141	157	173	189	205	221	237	253
E	1110	Ä	×	«	¥	+	ı	—	•
		142	158	174	190	206	222	238	254
F	1111	Å	ƒ	»	⌘	⌘	⌘	—	SP
		143	159	175	191	207	223	239	255

Page 2 (PC850 : Multilingual)

	HEX	8	9	A	B	C	D	E	F
HEX	BIN	1000	1001	1010	1011	1100	1101	1110	1111
0	0000	Ç	É	Á	⌘	⌘	⌘	α	
		128	144	160	176	192	208	224	240
1	0001	ü	À	Í	⌘	⌘	⌘	β	±
		129	145	161	177	193	209	225	241
2	0010	é	Ê	Ó	⌘	⌘	⌘	Γ	≥
		130	146	162	178	194	210	226	242
3	0011	ã	õ	ú	⌘	⌘	⌘	π	≤
		131	147	163	179	195	211	227	243
4	0100	ä	ö	ñ	⌘	⌘	⌘	Σ	ƒ
		132	148	164	180	196	212	228	244
5	0101	à	ò	ñ	⌘	⌘	⌘	σ	ƒ
		133	149	165	181	197	213	229	245
6	0110	Á	Û	â	⌘	⌘	⌘	μ	÷
		134	150	166	182	198	214	230	246
7	0111	ç	ù	œ	⌘	⌘	⌘	τ	≈
		135	151	167	183	199	215	231	247
8	1000	ê	ı	ç	⌘	⌘	⌘	φ	°
		136	152	168	184	200	216	232	248
9	1001	Ë	Ö	Ø	⌘	⌘	⌘	θ	•
		137	153	169	185	201	217	233	249
A	1010	è	Ü	⌘	⌘	⌘	⌘	Ω	•
		138	154	170	186	202	218	234	250
B	1011	í	⌘	‡	⌘	⌘	⌘	δ	
		139	155	171	187	203	219	235	251
C	1100	ô	£	‡	⌘	⌘	⌘	∞	n
		140	156	172	188	204	220	236	252
D	1101	ì	Ü	ı	⌘	⌘	⌘	ø	ˆ
		141	157	173	189	205	221	237	253
E	1110	Ä	⌘	«	⌘	⌘	⌘	—	•
		142	158	174	190	206	222	238	254
F	1111	Å	Ó	»	⌘	⌘	⌘	—	SP
		143	159	175	191	207	223	239	255

Page 3 (PC860 : Portuguese)

	HEX	8	9	A	B	C	D	E	F
HEX	BIN	1000	1001	1010	1011	1100	1101	1110	1111
0	0000	Ç	É	Í	Ë	Ł	Ǽ	α	
		128	144	160	176	192	208	224	240
1	0001	Û	Ê	Ĵ	Ï	Ṭ	Ṭ	β	±
		129	145	161	177	193	209	225	241
2	0010	É	Ê	Ó	Ô	Ṭ	Ṭ	Γ	≥
		130	146	162	178	194	210	226	242
3	0011	À	Ö	Ú	Û	Ṭ	Ṭ	π	≤
		131	147	163	179	195	211	227	243
4	0100	Ä	Ë	Ĵ	Ï	Ṭ	Ṭ	Σ	ƒ
		132	148	164	180	196	212	228	244
5	0101	À	Ë	Ĵ	Ï	Ṭ	Ṭ	σ	ƒ
		133	149	165	181	197	213	229	245
6	0110	À	Ë	Ĵ	Ï	Ṭ	Ṭ	μ	÷
		134	150	166	182	198	214	230	246
7	0111	Ç	Û	Ö	Û	Ṭ	Ṭ	τ	≈
		135	151	167	183	199	215	231	247
8	1000	È	Û	Û	Û	Ṭ	Ṭ	Φ	°
		136	152	168	184	200	216	232	248
9	1001	È	Ö	Ṭ	Ṭ	Ṭ	Ṭ	Θ	°
		137	153	169	185	201	217	233	249
A	1010	È	Û	Ṭ	Ṭ	Ṭ	Ṭ	Ω	°
		138	154	170	186	202	218	234	250
B	1011	Ë	Φ	Ṭ	Ṭ	Ṭ	Ṭ	δ	
		139	155	171	187	203	219	235	251
C	1100	Ë	£	Ṭ	Ṭ	Ṭ	Ṭ	∞	n
		140	156	172	188	204	220	236	252
D	1101	Ë	Û	Ṭ	Ṭ	Ṭ	Ṭ	ø	²
		141	157	173	189	205	221	237	253
E	1110	Ä	Û	«	Ṭ	Ṭ	Ṭ		■
		142	158	174	190	206	222	238	254
F	1111	§	ƒ	»	Ṭ	Ṭ	Ṭ	SP	
		143	159	175	191	207	223	239	255

	HEX	8	9	A	B	C	D	E	F
HEX	BIN	1000	1001	1010	1011	1100	1101	1110	1111
0	0000	Ç	É	Í	Ë	Ł	Ǽ	α	
		128	144	160	176	192	208	224	240
1	0001	Û	Ê	Ĵ	Ï	Ṭ	Ṭ	β	±
		129	145	161	177	193	209	225	241
2	0010	É	Ê	Ó	Ô	Ṭ	Ṭ	Γ	≥
		130	146	162	178	194	210	226	242
3	0011	À	Ö	Ú	Û	Ṭ	Ṭ	π	≤
		131	147	163	179	195	211	227	243
4	0100	Ä	Ë	Ĵ	Ï	Ṭ	Ṭ	Σ	ƒ
		132	148	164	180	196	212	228	244
5	0101	À	Ë	Ĵ	Ï	Ṭ	Ṭ	σ	ƒ
		133	149	165	181	197	213	229	245
6	0110	À	Ë	Ĵ	Ï	Ṭ	Ṭ	μ	÷
		134	150	166	182	198	214	230	246
7	0111	Ç	Û	Ö	Û	Ṭ	Ṭ	τ	≈
		135	151	167	183	199	215	231	247
8	1000	È	Û	Û	Û	Ṭ	Ṭ	Φ	°
		136	152	168	184	200	216	232	248
9	1001	È	Ö	Ṭ	Ṭ	Ṭ	Ṭ	Θ	°
		137	153	169	185	201	217	233	249
A	1010	È	Û	Ṭ	Ṭ	Ṭ	Ṭ	Ω	°
		138	154	170	186	202	218	234	250
B	1011	Ë	Φ	Ṭ	Ṭ	Ṭ	Ṭ	δ	
		139	155	171	187	203	219	235	251
C	1100	Ë	£	Ṭ	Ṭ	Ṭ	Ṭ	∞	n
		140	156	172	188	204	220	236	252
D	1101	Ë	Û	Ṭ	Ṭ	Ṭ	Ṭ	ø	²
		141	157	173	189	205	221	237	253
E	1110	Ä	Û	«	Ṭ	Ṭ	Ṭ		■
		142	158	174	190	206	222	238	254
F	1111	§	ƒ	»	Ṭ	Ṭ	Ṭ	SP	
		143	159	175	191	207	223	239	255

	HEX	8	9	A	B	C	D	E	F
HEX	BIN	1000	1001	1010	1011	1100	1101	1110	1111
0	0000	Ç	É	á	■	Ł	ð	ó	—
		128	144	160	176	192	208	224	240
1	0001	ü	æ	í	■	Ł	Ð	β	±
		129	145	161	177	193	209	225	241
2	0010	é	Æ	ó	■	Ł	Ê	ô	=
		130	146	162	178	194	210	226	242
3	0011	â	ô	ú	|	Ł	Ë	ò	¾
		131	147	163	179	195	211	227	243
4	0100	ä	ö	ñ	Ł	—	È	õ	¶
		132	148	164	180	196	212	228	244
5	0101	à	ò	ñ	Á	Ł	€	ö	§
		133	149	165	181	197	213	229	245
6	0110	á	û	ª	Â	ä	Í	µ	÷
		134	150	166	182	198	214	230	246
7	0111	ç	ù	º	Ã	Ä	Î	þ	.
		135	151	167	183	199	215	231	247
8	1000	ê	ÿ	¿	©	Ł	Ï	ƒ	°
		136	152	168	184	200	216	232	248
9	1001	ë	ÿ	®	Ł	ŕ	Ú	—	—
		137	153	169	185	201	217	233	249
A	1010	è	Ü	ƒ	Ł	Ł	Û	.	.
		138	154	170	186	202	218	234	250
B	1011	ï	ø	½	Ł	ŕ	Ü	¹	¹
		139	155	171	187	203	219	235	251
C	1100	ġ	£	¼	Ł	Ł	Ý	³	³
		140	156	172	188	204	220	236	252
D	1101	ì	ø	ı	Ł	=	ı	Ÿ	²
		141	157	173	189	205	221	237	253
E	1110	Ä	×	«	Ł	Ł	İ	—	■
		142	158	174	190	206	222	238	254
F	1111	Å	f	»	Ł	Ł	—	.	SP
		143	159	175	191	207	223	239	255

	HEX	8	9	A	B	C	D	E	F
HEX	BIN	1000	1001	1010	1011	1100	1101	1110	1111
0	0000	SP	SP	SP	SP	SP	SP	SP	SP
		128	144	160	176	192	208	224	240
1	0001	SP	SP	SP	SP	SP	SP	SP	SP
		129	145	161	177	193	209	225	241
2	0010	SP	SP	SP	SP	SP	SP	SP	SP
		130	146	162	178	194	210	226	242
3	0011	SP	SP	SP	SP	SP	SP	SP	SP
		131	147	163	179	195	211	227	243
4	0100	SP	ö	SP	SP	SP	SP	SP	SP
		132	148	164	180	196	212	228	244
5	0101	SP	SP	SP	SP	SP	SP	SP	SP
		133	149	165	181	197	213	229	245
6	0110	SP	SP	SP	SP	SP	SP	SP	SP
		134	150	166	182	198	214	230	246
7	0111	SP	SP	SP	SP	SP	SP	SP	SP
		135	151	167	183	199	215	231	247
8	1000	SP	SP	SP	SP	SP	SP	SP	SP
		136	152	168	184	200	216	232	248
9	1001	SP	SP	SP	SP	SP	SP	SP	SP
		137	153	169	185	201	217	233	249
A	1010	SP	SP	SP	SP	SP	SP	SP	SP
		138	154	170	186	202	218	234	250
B	1011	SP	SP	SP	SP	SP	SP	SP	SP
		139	155	171	187	203	219	235	251
C	1100	SP	SP	SP	SP	SP	SP	SP	SP
		140	156	172	188	204	220	236	252
D	1101	SP	SP	SP	SP	SP	SP	SP	SP
		141	157	173	189	205	221	237	253
E	1110	SP	SP	SP	SP	SP	SP	SP	SP
		142	158	174	190	206	222	238	254
F	1111	SP	SP	SP	SP	SP	SP	SP	SP
		143	159	175	191	207	223	239	255

Chapter 5. Control Commands List

Country	ASCII code (hexadecimal)												
	Hex	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
	Dec	35	36	64	91	92	93	94	96	123	124	125	126
U.S.A.	#	\$	@	[	\	\]	^	`	{	|	}	~
France	#	\$	à	°	ç	§	^	`	é	ù	è	"	
Germany	#	\$	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß	
U.K.	£	\$	@	[	\	\]	^	`	{	|	}	~
Denmark I	#	\$	@	Æ	Ø	Å	^	`	œ	ø	å	~	
Sweden	#	ä	é	Ä	Ö	Å	Ü	é	ä	ö	å	ü	
Italy	#	\$	@	°	\	é	^	ù	à	ò	è	ì	
Spain	Pt	\$	@	í	Ñ	¿	^	`	ñ	|	~		
Norway	#	ä	é	Æ	Ø	Å	Ü	é	œ	ø	å	ü	
Denmark II	#	\$	É	Æ	Ø	Å	Ü	é	œ	ø	å	ü	

International Character Set

Control codes	Hexadecimal Codes	Function
<HT>	09	Horizontal tab
<LF>	0A	Print and line feed
<FF>	0C	Print and return to standard mode in page mode
<CR>	0D	Print and carriage return
<CAN>	18	Cancel print data in page mode
<DLE> <EOT> n	10 04 n	Real-time status transmission
<DLE> <ENQ> n	10 05 n	Real-time request to printer
<ESC> <FF>	1B 0C	Print data in page mode
<ESC> <SP> n	1B 20 n	Set right-side character spacing
<ESC> ! n	1B 21 n	Select print modes
<ESC> \$ nL nH	1B 24 nL nH	Set absolute print position
<ESC> % n	1B 25 n	Select/Cancel user-defined character set
<ESC> & y c1 c2 ..	1B 26 y c1 c2	Define user-defined characters
<ESC> * m nL nH ..	1B 2A m nL nH	Select bit-image mode
<ESC> - n	1B 2D n	Turn underline mode on/off
<ESC> 2	1B 32	Select default line spacing
<ESC> 3 n	1B 33 n	Set line spacing
<ESC> = n	1B 3D n	Set peripheral device
<ESC> ? n	1B 3F n	Cancel user-defined characters
<ESC> @	1B 40	Initialize printer
<ESC> D n1 ~ nK	1B 44 ... 00	Set horizontal tab position
<ESC> E n	1B 45 n	Turn emphasized mode on/off
<ESC> G n	1B 47 n	Turn double-strike mode on/off
<ESC> J n	1B 4A n	Print and feed paper
<ESC> L	1B 4C	Select page mode
<ESC> M n	1B 4D n	Select character fonts
<ESC> R n	1B 52 n	Select an international character set
<ESC> S	1B 53	Select standard mode
<ESC> T n	1B 54 n	Select print direction in page mode
<ESC> V n	1B 56 n	Turn 90° clockwise rotation mode on/off
<ESC> W xL.....	1B 57	Set printing area in page mode
<ESC> W nL nH	1B 5C n	Set relative print position
<ESC> a n	1B 61 n	Select justification

Control codes	Hexadecimal codes	Function
<ESC> c 3 n	1B 63 33 n	Select paper sensor to output paper end signals
<ESC> c 4 n	1B 63 34 n	Select paper sensor to stop printing
<ESC> c 5 n	1B 63 35 n	Enable/Disable panel button
<ESC> d n	1B 64 n	Print and feed n lines
<ESC> p m t1 t2	1B 70 m t1 t2	Generate pulse
<ESC> t n	1B 74 n	Select character code table
<ESC> { n	1B 7B n	Turn on/off upside-down printing mode
<FS> p n m	1C 70 n m	Print NT bit image
<FS> q n	1C 71 n ...	Define NV bit image
<GS> ! n	1D 21 n	Select character size
<GS> \$ nL nH	1D 24 nL nH	Set absolute vertical print position in page mode
<GS> * x y	1D 2A x y	Define downloaded bit image
<GS> / m	1D 2F n	Print downloaded bit image
<GS> :	1D 3A	Start/end macro definition
<GS> B n	1D 42 n	Turn white/black reverse printing mode on/off
<GS> H n	1D 48 n	Select printing position of HRI characters
<GS> I n	1D 49 n	Transmit printer ID
<GS> L nL nH	1D 4C nL nH	Set left margin
<GS> P x y	1D 50 x y	Set horizontal and vertical motion units
<GS> V m	1D 56 m	Select cut mode and cut paper
<GS> V m n	1D 56 m n	
<GS> W nL nH	1D 57 nL nH	Set printing area width
<GS> W nL nH	1D 5C nL nH	Set relative vertical print position in page mode
<GS> ^ r t m	1D 5E r t m	Execute macro
<GS> a n	1D 61 n	Enable/Disable Automatic status back
<GS> f n	1D 62 n	Select font for HRI characters
<GS> h n	1D 68 n	Set bar code height
<GS> k m ....NUL	1D 6B m... NUL	Print bar code
<GS> k m n ...	1D 6B m n ...	
<GS> r n	1D 72 n	Transmit status
<GS> v 0 m	1D 76 30	Print raster bit image
<GS> w n	1D 77 n	Set bar code width

Command Notation

[Name]	The name of the command.
[Format]	The code sequence. ASCII Indicates the ASCII equivalents. Hex indicates the hexadecimal equivalents. Decimal indicates the decimal equivalents. [] k indicates the contents of the [] should be repeated k times.
[Range]	Gives the allowable ranges for the arguments.
[Description]	Describes the function of the command.

Explanation of Terms

LSB Least Significant Bit

HT

[Name]	Horizontal tab.
[Format]	ASCII HT Hex 09 Decimal 9
[Description]	Moves the print position to the next horizontal tab position.

LF

[Name]	Print and line feed.
[Format]	ASCII LF Hex 0A Decimal 10
[Description]	Prints the data in the print buffer and feeds one line based on the current line spacing.

FF

[Name]	Print and return to standard mode in page mode.
[Format]	ASCII FF Hex 0C Decimal 12
[Description]	Prints the data in the print buffer collectively and returns to standard mode.

CR

[Name]	Print and carriage return.
[Format]	ASCII CR Hex 0D Decimal 13
[Description]	When automatic line feed is enabled, this command functions the same as LF : when automatic line feed is disabled, this command is ignored.

CAN

[Name] Cancel print data in page mode.
 [Format] ASCII CAN
 Hex 18
 Decimal 24
 [Description] In page mode, deletes all the print data in the current printable area.

DLE EOT n

[Name] Real-time status transmission.
 [Format] ASCII DLE EOT n
 Hex 10 04 n
 Decimal 16 4 n
 [Range] $1 \leq n \leq 4$
 [Description] Transmits the selected printer status specified by n in real-time, according to the following parameters :
 n = 1 : Transmit printer status. n = 2 : Transmit off-line status.
 n = 3 : Transmit error status. n = 4 : Transmit paper roll sensor status.

n = 1 : Printer status

Bit	Off/On	Hex	Decimal	Function
0	Off	00	0	Not used. Fixed to Off.
1	On	02	2	Not used. Fixed to On.
2	Off	00	0	Drawer open/close signal is LOW (connector pin 3).
	On	04	4	Drawer open/close signal is HIGH (connector pin 3).
3	Off	00	0	On-Line
	On	08	8	Off-Line
4	On	10	16	Not used. Fixed to On.
5-6	-	-	-	Undefined.
7	Off	00	0	Not used. Fixed to Off.

n = 2 : Off-line status

Bit	Off/On	Hex	Decimal	Function
0	Off	00	0	Not used. Fixed to Off.
1	On	02	2	Not used. Fixed to On.
2	Off	00	0	Cover is closed.
	On	04	4	Cover is open.
3	Off	00	0	Paper is not being fed by using the PAPER FEED button.
	On	08	8	Paper is being fed by the PAPER FEED button.
4	On	10	16	Not used. Fixed to On.
5	Off	00	0	No paper-end stop.
	On	20	32	Printing stops due to paper end.
6	Off	00	00	No error.
	On	40	64	Error occurs.
7	Off	00	0	Not used. Fixed to Off.

Bit 5 : Becomes on when the paper end sensor detects paper end and printing stops.

n = 3 : Error status

Bit	Off/On	Hex	Decimal	Function
0	Off	00	0	Not used. Fixed to Off.
1	On	02	2	Not used. Fixed to On.
2	-	-	-	Undefined.
3	Off	00	0	No auto-cutter error.
	On	08	8	Auto-cutter error occurs.
4	On	10	16	Not used. Fixed to On.
5	Off	00	0	No unrecoverable error.
	On	20	32	Unrecoverable error occurs.
6	Off	00	0	No auto-recoverable error.
	On	40	64	Auto recoverable error occurs.
7	Off	00	0	Not used. Fixed to Off.

Bit 3 : If these errors occur due to paper jams or the like, it is possible to recover by correcting the cause of the error and executing **DLE ENQ n** ($1 \leq n \leq 2$).

Bit 6 : When printing is stopped due to high print head temperature until the print head temperature drops sufficiently or when the paper roll cover is open during printing, bit 6 is on.

n = 4 : Continuous paper sensor status

Bit	Off/On	Hex	Decimal	Function
0	Off	00	0	Not used. Fixed to Off.
1	On	02	2	Not used. Fixed to On.
2	Off	00	0	Paper roll Near-END sensor : Paper adequate.
3	On	0C	12	Paper near-end is detected by the paper roll Near-END sensor.
4	On	10	16	Not used. Fixed to On.
5	Off	00	0	Paper roll end sensor : Paper present.
6	On	60	96	Paper roll end detected by the paper roll-end sensor.
7	Off	00	0	Not used. Fixed to Off.

DLE ENQ n

[Name] Real-time request to printer.
 [Format] ASCII DLE ENQ n
 Hex 10 05 n
 Decimal 16 5 n
 [Range] $1 \leq n \leq 2$
 [Description] Recovers from an error and restart printing from the line where the error occurred.

ESC FF

[Name] Print data in page mode.
 [Format] ASCII ESC FF
 Hex 1B 0C
 Decimal 27 12
 [Description] In page mode, prints all buffered data in the printing area collectively.

ESC SP n

[Name] Set right-side character spacing.
 [Format] ASCII ESC SP n
 Hex 1B 20 n
 Decimal 27 32 n
 [Range] $0 \leq n \leq 255$
 [Description] Sets the character spacing for the right side of the character to [n × horizontal or vertical motion units].

ESC ! n

[Name] Select print modes.
 [Format] ASCII ESC ! n
 Hex 1B 21 n
 Decimal 27 33 n
 [Range] $0 \leq n \leq 255$
 [Description] Selects print mode(s) using n as follows.

Bit	Off/On	Hex	Decimal	Function
0	Off	00	0	Character font(12 × 24) selected.
	On	01	1	Character font(9 × 17) selected.
1,2	-	-	-	Undefined.
3	Off	00	0	Emphasized mode not selected.
	On	08	8	Emphasized mode selected.
4	Off	00	0	Double-height mode not selected.
	On	10	16	Double-height mode selected.
5	Off	00	0	Double-width mode not selected.
	On	20	32	Double-width mode selected.
6	-	-	-	Undefined.
7	Off	00	0	Underline mode not selected.
	On	80	128	Underline mode selected.

ESC \$ nL nH

[Name] Set absolute print position.
 [Format] ASCII ESC \$ nL n
 Hex 1B 24 nL n
 Decimal 27 36 nL n
 [Range] $0 \leq n \leq 255$
 $0 \leq n \leq 255$
 [Description] Set the distance from the beginning of the line to the position at which subsequent characters are to be printed.
 * The distance from the beginning of the line to the print position is [(nL + nH × 256) × (vertical or horizontal notion unit)] inches.

ESC % n

[Name] Select / Cancel user-defined character set.
 [Format] ASCII ESC % n
 Hex 1B 25 n
 Decimal 27 37 n
 [Range] $0 \leq n \leq 255$
 [Description] Selects or cancels the user-defined character set.
 When the LSB is 0, the user-defined character set is canceled.
 When the LSB is 1, the user-defined character set is selected.

ESC & y c1 c2 [x1 d1...d(y X x1)]... [xk d1... d(yx X xk)]

[Name] Define user-defined characters.
 [Format] ASCII ESC & n y c1 c2[x1 d1...d(y X x1)]... [xk d1... d(yx X xk)]
 Hex 1B 26 n y c1 c2[x1 d1...d(y X x1)]... [xk d1... d(yx X xk)]
 Decimal 27 38 n y c1 c2[x1 d1...d(y X x1)]... [xk d1... d(yx X xk)]
 [Range] $y = 3, 32 \leq c1 \leq c2 \leq 126$
 $0 \leq x \leq 12$ (12x24 font)
 $0 \leq x \leq 9$ (9x17 font)
 $0 \leq d1 \dots d(y X xk) \leq 255$
 [Description] - y specifies the number of bytes in the vertical direction.
 - c1 specifies the beginning character code for the definition, and c2 specifies the final code.
 - x specifies the number of dots in the horizontal direction.

ESC * m nL nH d1...dk

[Name] Select bit-image mode.
 [Format] ASCII ESC * m nL nH d1...dk
 Hex 1B 2A m nL nH d1...dk
 Decimal 27 42 m nL nH d1...dk
 [Range] m = 0, 1, 32, 33
 0 ≤ nL ≤ 255
 0 ≤ nH ≤ 3
 0 ≤ d ≤ 255
 [Description] Selects a bit-image mode using m for the number of dots specified by nL and nH, as follows :

m	No. Vertical Dots	Vertical Direction		Horizontal Direction	
		Number of Dots	Dot Density	Dot Density	Number of Data (k)
0	8-dots single-density	8	60 DPI	90 DPI	nL + nH × 256
1	8-dot double-density	8	60 DPI	180 DPI	nL + nH × 256
32	24-dot single-density	24	180 DPI	90 DPI	(nL + nH × 256) × 3
33	24-dot double-density	24	180 DPI	180 DPI	(nL + nH × 256) × 3

ESC - n

[Name] Turn underline mode on / off.
 [Format] ASCII ESC - n
 Hex 1B 2D n
 Decimal 27 45 n
 [Range] 0 ≤ n ≤ 2, 48 ≤ H ≤ 50
 [Description] Turns underline mode on or off, based on the following values of n :

n	Function
0, 48	Turns off underline mode.
1, 49	Turns on underline mode (1-dot thick).
2, 50	Turns on underline mode (2-dot thick).

ESC 2

[Name] Select default line spacing.
 [Format] ASCII ESC 2
 Hex 1B 32
 Decimal 27 50
 [Description] Selects 1/6-inch line (approximately 4.32mm) spacing.

ESC 3 n

[Name] Set line spacing
 [Format] ASCII ESC 3 n
 Hex 1B 33 n
 Decimal 27 51 n
 [Range] 0 ≤ n ≤ 255
 [Description] Sets the line spacing to [n X vertical or horizontal motion unit] inches.

ESC = n

[Name] Select peripheral device.
 [Format] ASCII ESC = n
 Hex 1B 3D n
 Decimal 27 61 n
 [Range] 0 ≤ n ≤ 3
 [Description] Selects device to which host computer sends data, using n as follows :

Bit	Off/On	Hex	Decimal	Function
0	Off	00	0	Printer Disabled.
	On	01	1	Printer Disabled.
1-7	-	-	-	Undefined.

ESC ? n

[Name] Cancel user-defined characters.
 [Format] ASCII ESC ? n
 Hex 1B 3F n
 Decimal 27 63 n
 [Range] 32 ≤ n ≤ 126
 [Description] Cancels user-defined characters.

ESC @

[Name] Initialize printer.
 [Format] ASCII ESC @
 Hex 1B 40
 Decimal 27 64
 [Range] 32 ≤ n ≤ 126
 [Description] Clears the data in the print buffer and resets the printer mode to the mode that was in effect when the power was turned on.

ESC D n1... nk NUL

[Name] Set horizontal tab positions.
 [Format] ASCII ESC D n1... nk NUL
 Hex 1B 44 n1... nk 00
 Decimal 27 68 n1... nk 0
 [Range] $1 \leq n \leq 255$
 $0 \leq k \leq 32$

[Description] Sets horizontal tab positions.

* n specifies the column number for setting a horizontal tab position from the beginning of the line.

* k indicates the total number of horizontal tab positions to be set.

ESC E n

[Name] Turn emphasized mode on / off.
 [Format] ASCII ESC E n
 Hex 1B 45 n
 Decimal 27 69 n
 [Range] $0 \leq n \leq 255$

[Description] Turns emphasized mode on or off.

* When the LSB of n is 0, emphasized mode is turned off.

* When the LSB of n is 1, emphasized mode is turned on.

ESC G n

[Name] Turn on / off double-strike mode.
 [Format] ASCII ESC G n
 Hex 1B 47 n
 Decimal 27 71 n
 [Range] $0 \leq n \leq 255$

[Description] Turns double-strike mode on or off.

* When the LSB of n is 0, double-strike mode is turned off.

* When the LSB of n is 1, double-strike mode is turned on.

ESC J n

[Name] Print and feed paper.
 [Format] ASCII ESC J n
 Hex 1B 4A n
 Decimal 27 74 n
 [Range] $0 \leq n \leq 255$

[Description] Prints the data in the print buffer and feeds the paper
 [n X vertical or horizontal motion unit] inches.

ESC L

[Name] Select page mode.
 [Format] ASCII ESC L
 Hex 1B 4C
 Decimal 27 76

[Description] Switches from standard mode to page mode.

ESC M n

[Name] Select character font.
 [Format] ASCII ESC M n
 Hex 1B 4D n
 Decimal 27 77 n

[Range] n = 0, 1, 48, 49

[Description] Selects character fonts.

n	Function
0, 48	Character font A (12 × 24) selected.
1, 49	Character font B (9 × 17) selected.

ESC R n

[Name] Select an international character set.
 [Format] ASCII ESC R n
 Hex 1B 52 n
 Decimal 27 82 n

[Range] $0 \leq n \leq 10$

[Description] Selects an international character set in from the following table.

[Default] n = 0

n	Character set	n	Character set
0	U.S.A	5	Sweden
1	France	6	Italy
2	Germany	7	Spain
3	U.K	9	Norway
4	Denmark 1	10	Denmark 2

ESC S

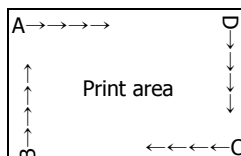
[Name] Select standard mode
 [Format] ASCII ESC S
 Hex 1B 53
 Decimal 27 83

[Description] Switches from page mode to standard mode.

ESC T n

[Name]	Select print direction in page mode.			
[Format]	ASCII	ESC	T	n
	Hex	1B	54	n
	Decimal	27	84	n
[Range]	$0 \leq n \leq 3$			
[Description]	$48 \leq n \leq 51$			
[Default]	Selects the print direction and starting position in page mode. n specifies the print direction and starting position as follows :			

n	Print Direction	Starting Position
0, 48	Left right	Upper left (A in the figure)
1, 49	Bottom to top	Lower left (B in the figure)
2, 50	Right to left	Lower right (C in the figure)
3, 51	Top to bottom	Upper right (D in the figure)



ESC V n

[Name]	Turn 90° clockwise rotation mode on/off.			
[Format]	ASCII	ESC	V	n
	Hex	1B	56	n
	Decimal	27	86	n
[Range]	$0 \leq n \leq 1, 48 \leq n \leq 49$			
[Description]	Turn 90° clockwise rotation mode on/off. n is used as follows :			

n	Function
0, 48	Turn off 90° clockwise rotation mode.
1, 49	Turn on 90° clockwise rotation mode.

ESC W xL xH yL yH dxL dxH dyL dyH

[Name]	Set printing area in page mode.			
[Format]	ASCII	ESC	W	xL xH yL yH dxL dxH dyL dyH
	Hex	1B	57	xL xH yL yH dxL dxH dyL dyH
	Decimal	27	87	xL xH yL yH dxL dxH dyL dyH
[Range]	$0 \leq xL xH yL yH dxL dxH dyL dyH \leq 255$ (except $dxL=0$ or $dyL=dyH=0$)			
[Description]	The horizontal starting position, vertical starting position, printing area width, and printing area height are defined as $x0$, $y0$, dx (inch), respectively. $x0 = [(xL + xH \times 256)] \times (\text{horizontal motion unit})$ $y0 = [(yL + yH \times 256)] \times (\text{vertical motion unit})$ $dx = [(dxL + dxH \times 256)] \times (\text{horizontal motion unit})$ $dy = [(dyL + dyH \times 256)] \times (\text{horizontal motion unit})$ The printing area is set as shown in the figure below.			

ESC W n

[Name]	Set relative print position.			
[Format]	ASCII	ESC	W	nL nH
	Hex	1B	5C	nL nH
	Decimal	27	92	nL nH
[Range]	$0 \leq nL \leq 255$			
	$0 \leq nH \leq 255$			
[Description]	Set the print starting position based on the current position by using the horizontal or vertical motion unit. * This command sets the distance from the current position to $[(nL + nH \times 256) \times \text{horizontal or vertical motion unit}]$			

ESC a n

[Name]	Select justification.			
[Format]	ASCII	ESC	a	n
	Hex	1B	61	n
	Decimal	27	97	n
[Range]	$0 \leq nL \leq 2, 48 \leq nL \leq 50$			
[Description]	Aligns all the data in one line to the specified position. n selects the type of justification as follows :			

n	Justification
0, 48	Left justification
1, 49	Centering
2, 50	Right justification

ESC c 3 n

[Name]	Select paper sensor(s) to output paper end signals.			
[Format]	ASCII	ESC	c	3 n
	Hex	1B	63	33 n
	Decimal	27	99	51 n
[Range]	$0 \leq n \leq 255$			
[Description]	Selects the paper sensor(s) to output paper end signals. * Each bit of n is used as follows.			

Bit	Off/On	Hex	Decimal	Function
0	Off	00	0	Paper roll near-end sensor disable.
	On	01	1	Paper roll near-end sensor enable.
1	Off	00	0	Paper roll near-end sensor disable.
	On	02	2	Paper roll near-end sensor enable.
2	Off	00	0	Paper roll end sensor disable.
	On	04	4	Paper roll end sensor enable.
3	Off	00	0	Paper roll end sensor disable.
	On	08	8	Paper roll end sensor enable.
4-7	-	-	-	Undefined.

ESC c 4 n

[Name] Select paper sensor(s) to stop printing.

[Format] ASCII ESC c 4 n
 Hex 1B 63 34 n
 Decimal 27 99 52 n

[Range] $0 \leq n \leq 255$

[Description] Selects the paper sensor(s) used to stop printing when a paper-end is detected, using n as follows :

Bit	Off/On	Hex	Decimal	Function
0	Off	00	0	Paper roll end sensor disable.
	On	01	1	Paper roll end sensor enable.
1	Off	00	0	Paper roll end sensor disable.
	On	02	2	Paper roll end sensor enable.
2-7	-	-	-	Undefined.

ESC c 5 n

[Name] Enable / Disable panel button.

[Format] ASCII ESC c 3 n
 Hex 1B 63 35 n
 Decimal 27 99 53 n

[Range] $0 \leq n \leq 255$

[Description] Enables or disables the panel button.

* When the LSB of n is 0, the panel buttons are enabled.

* When the LSB of n is 1, the panel buttons are disabled.

ESC d n

[Name] Print and feed n lines.

[Format] ASCII ESC d n
 Hex 1B 64 n
 Decimal 27 100 n

[Range] $0 \leq n \leq 255$

[Description] Prints the data in the print buffer and feeds n lines.

ESC p m t1 t2

[Name] Generate pulse.

[Format] ASCII ESC p m t1 t2
 Hex 1B 70 m t1 t2
 Decimal 27 112 m t1 t2

[Range] m = 0, 1, 48, 49
 $0 \leq t1 \leq 255, 0 \leq t2 \leq 255$

[Description] Outputs the pulse specified by t1 and t2 to connector pin m as follows.

m	Connector pin
0, 48	Drawer kick-out connector pin 2
1, 49	Drawer kick-out connector pin 5

ESC t n

[Name] Select character code table.

[Format] ASCII ESC t n
 Hex 1B 74 n
 Decimal 27 116 n

[Range] $0 \leq n \leq 5, n = 255$

[Description] Selects a page n from the character code table.

n	Page
0	0 (PC437 {USA, standard Europe})
1	1 (Katakana)
2	2 (PC850 {Multilingual})
3	3 (PC860 {Portuguese})
4	4 (PC863 {Canadian-French})
5	5 (PC865 {Nordic})
19	19 (PC858 {Euro})
255	Space page

ESC { n

[Name] Turns on / off upside-down printing mode.

[Format] ASCII ESC { n
 Hex 1B 7B n
 Decimal 27 123 n

[Range] $0 \leq n \leq 255$

[Description] Turns upside-down printing mode on or off.

* When the LSB of n is 0, upside-down printing mode is turned off.

* When the LSB of n is 1, upside-down printing mode is turned on.

FS p n m

[Name] Print NV bit image.

[Format] ASCII FS p n m
 Hex 1C 70 n m
 Decimal 28 112 n m

[Range] $1 \leq n \leq 255$
 $0 \leq m \leq 3, 48 \leq m \leq 51$

[Description] Prints a NV bit image n using the mode specified by m.

m	Mode	Vertical Dot Density (DPI)	Horizontal Dot Density (DPI)
0, 48	Normal	180	180
1, 49	Double-width	180	90
2, 50	Double-height	90	180
3, 51	Quadruple	90	90

* n is the number of the NV bit image (defined using the **FS q** command).

* m specifies the bit image mode.

FS q n [xL xH yL yH d1...dk]1...[xL xH yL yH d1...dk]n

[Name]	Defined NV bit image.				
[Format]	ASCII	FS	q	n	[xL xH yL yH d1...dk]1...[xL xH yL yH d1...dk]n
	Hex	1C	71	n	[xL xH yL yH d1...dk]1...[xL xH yL yH d1...dk]n
	Decimal	28	113	n	[xL xH yL yH d1...dk]1...[xL xH yL yH d1...dk]n
[Range]	$1 \leq n \leq 255$				
	$0 \leq xL \leq 255$				
	$0 \leq xH \leq 3$ (when $1 \leq (xL + xH \times 256) \leq 1023$)				
	$0 \leq yL \leq 3$ (when $1 \leq (xL + xH \times 256) \leq 288$)				
	$1 \leq d \leq 255$				
	$k = (xL + xH \times 256) \times (yL + yH \times 256) \times 8$				
[Description]	Total defined data area = 2M bits (256K bytes)				
	Define the NV bit image specified by n.				
	* n specifies the number of the defined NV bit image.				
	* xL, xH specifies $(xL + xH \times 256) \times 8$ dots in the horizontal direction for the NV bit image you are defining.				
	* yL, yH specifies $(yL + yH \times 256) \times 8$ dots in the vertical direction for the NV bit image you are defining.				

GS ! n

[Name]	Select character size.			
[Format]	ASCII	GS	!	n
	Hex	1D	21	n
	Decimal	29	33	n
[Range]	$0 \leq n \leq 255$			
	$(1 \leq \text{vertical number of times} \leq 8, 1 \leq \text{horizontal number of times} \leq 8)$			
[Description]	Selects the character height using bits 0 to 2 and selects the character width using bits 4 to 7, as follows :			

Bit	Off/On	Hex	Decimal	Function
0-3				Character height selection. See Table 2
4-7				Character width selection. See Table 1

Table 1

Character Width Selection

Hex	Decimal	Width
00	0	1 (normal)
10	16	2 (double-width)
20	32	3
30	48	4
40	64	5
50	80	6
60	96	7
70	112	8

Table 2

Character Height Selection

Hex	Decimal	Height
00	0	1 (normal)
10	16	2 (double-width)
20	32	3
30	48	4
40	64	5
50	80	6
60	96	7
70	112	8

GS \$ nL nH

[Name]	Set absolute vertical print position in page mode.				
[Format]	ASCII	GS	\$	nL	nH
	Hex	1D	24	nL	nH
	Decimal	29	36	nL	nH
[Range]	0 ≤ nL ≤ 255, 0 ≤ nH ≤ 255				
[Description]	* Sets the absolute vertical print starting position for buffer character data in page mode.				
	* This command sets the absolute print position to [(nL + nH × 256) × (vertical or horizontal motion unit)] inches.				

GS * x y d1...d(x × y × 8)

[Name]	Define downloaded bit image.				
[Format]	ASCII	GS	*	x	y d1...d(x × y × 8)
	Hex	1D	2A	x	y d1...d(x × y × 8)
	Decimal	29	42	x	y d1...d(x × y × 8)
[Range]	$1 \leq x \leq 255, 1 \leq y \leq 48$				
	$x \times y \leq 1536, 0 \leq d \leq 255$				
[Description]	Defines a downloaded bit image using the dots specified by x and y.				
	* x indicates the number of dots in the horizontal direction.				
	* y indicates the number of dots in the vertical direction.				

GS / m

[Name]	Print downloaded bit image.			
[Format]	ASCII	GS	/	m
	Hex	1D	2F	m
	Decimal	29	47	m
[Range]	$0 \leq m \leq 3, 48 \leq m \leq 51$			
[Description]	Prints a downloaded bit image using the mode specified by m. m selects a mode from the table below :			

m	Mode	Vertical Dot Density (DIP)	Horizontal Dot Density (DIP)
0, 48	Normal	180	180
1, 49	Double-width	180	90
2, 50	Double-height	90	180
3, 51	Quadruple	90	90

GS :

[Name]	Start/End macro definition.			
[Format]	ASCII	GS	:	
	Hex	1D	3A	
	Decimal	29	58	
[Description]	Starts or ends macro definition.			

GS B n

[Name]	Turn white/black reverse printing mode on/off.			
[Format]	ASCII	GS	B	n
	Hex	1D	42	n
	Decimal	29	66	n
[Range]	$0 \leq n \leq 255$			
[Description]	Turns on or off white/black reverse printing mode.			
	* When the LSB is 0, white/black reverse printing mode is turned off.			
	* When the LSB is 1, white/black reverse printing mode is turned on.			

GS H n

[Name]	Select printing position of HRI characters.			
[Format]	ASCII	GS	B	n
	Hex	1D	48	n
	Decimal	29	72	n
[Description]	Selects the printing position of HRI characters when printing a bar code.			
	n selects the printing position as follows :			

n	Printing position
0, 48	Not printed.
1, 49	Above bar code.
2, 50	Below bar code.
3, 51	Both above and below the bar code.

* HRI indicates Human Readable Interpretation.

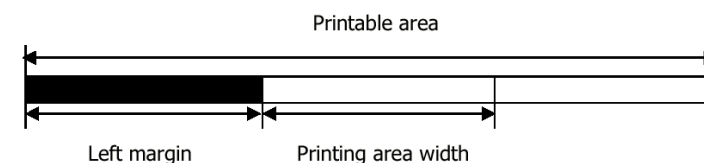
GS I n

[Name]	Transmit printer ID.			
[Format]	ASCII	GS	I	n
	Hex	1D	49	n
	Decimal	29	73	n
[Range]	$1 \leq n \leq 3, 49 \leq n \leq 51$			
[Description]	Transmits the printer ID specified by n as follows :			

n	Printer ID	Specification	ID (hexadecimal)
1, 49	Printer model ID	SRP-350 series	20
2, 50	Type ID		02
3, 51	ROM version ID	Depends on ROM version	02

GS L nL nH

[Name]	Set left margin.			
[Format]	ASCII	GS	L	nL nH
	Hex	1D	4C	nL nH
	Decimal	29	76	nL nH
[Range]	$0 \leq nL \leq 255, 0 \leq nH \leq 255$			
[Description]	Sets the left margin using nL and nH.			
	* The left margin is set to $[(nL + nH \times 256) \times \text{horizontal motion unit}]$ inches.			



GS P x y

[Name]	Set horizontal and vertical motion units.				
[Format]	ASCII	GS	P	x	y
	Hex	1D	50	x	y
	Decimal	29	80	x	y
[Range]	$0 \leq x \leq 255, 0 \leq y \leq 255$				
[Description]	Sets the horizontal and vertical motion units to approximately 25.4/x mm {1/x inch and } and approximately 25.4/y mm {1/y inches }, respectively.				
	When x and y are set to 0, the default setting of each value is used.				

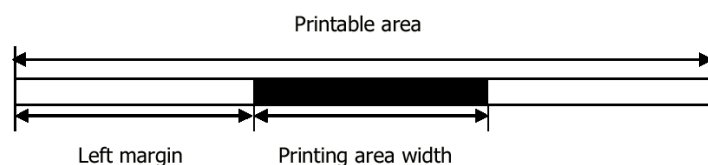
① GS V m, ② GS V m n

[Name]	Select cut mode and cut paper.				
[Format]	① ASCII	GS	V	m	
	Hex	1D	56	m	
	Decimal	29	86	m	
	② ASCII	GS	V	m	n
	Hex	1D	56	m	n
	Decimal	29	86	m	n
[Range]	① $m = 1, 49$				
	② $m = 66, 0 \leq n \leq 255$				
[Description]	Selects a mode for cutting paper and executes paper cutting.				
	The value of m selects the mode as follows :				

m	Print mode
0, 1, 49	Partial cut (one point left uncut)
66	Feeds paper (cutting position + [nX(vertical motion unit)]), and cuts the paper partially (one point left uncut).

GS W nL nH

[Name]	Set printing area width.				
[Format]	ASCII	GS	W	nL	nH
	Hex	1D	57	nL	nH
	Decimal	29	87	nL	nH
[Range]	$0 \leq nL \leq 255, 0 \leq nH \leq 255$				
[Description]	Sets the printing area width to the area specified by nL and nH.				
	* The printing area width is set to $[(nL + nH \times 256) \times \text{horizontal motion unit}]$ inches.				



GS W nL nH

[Name]	Set relative vertical print position in page mode.				
[Format]	ASCII	GS	W	nL	nH
	Hex	1D	5C	nL	nH
	Decimal	29	92	nL	nH
[Range]	$0 \leq nL \leq 255, 0 \leq nH \leq 255$				
[Description]	Sets the relative vertical print starting position from the current position in page mode.				
	* This command sets the distance from the current position to $[(nL + nH \times 256) \times \text{vertical or horizontal motion unit}]$ inches.				

GS ^ r t m

[Name]	Execute macro.					
[Format]	ASCII	GS	^	r	t	m
	Hex	1D	5E	r	t	m
	Decimal	29	94	r	t	m
[Range]	$0 \leq r \leq 255, 0 \leq t \leq 255$ $m = 0, 1$					
[Description]	Executes a macro.					
	* r specifies the number of times to execute the macro.					
	* t specifies the waiting time for executing the macro.					
	* m specifies macro executing mode.					
	When the LSB of $m = 0$					
	The macro executes r times continuously at the interval specified by t.					
When the LSB of $m = 1$:						
After waiting for the period specified by t, the PAPER OUT LED indicators blink and the printer waits for the FEED button to be pressed. After the button is pressed, the printer executes the macro once. The printer repeats the operation r times.						

GS a n

[Name]	Enable/Disable Automatic Status Back.			
[Format]	ASCII	GS	a	n
	Hex	1D	61	n
	Decimal	29	97	n
[Range]	$0 \leq n \leq 255$			
[Description]	Enables or disables ASB and specifies the status items to include, using n as follows :			

Bit	Off/On	Hex	Decimal	Status for ASB
0	Off	00	0	Drawer kick-out connector pin 3 status disabled.
	On	01	1	Drawer kick-out connector pin 3 status enabled.
1	Off	00	0	On-line / Off-line status disabled.
	On	02	2	On-line / Off-line status enabled.
2	Off	00	0	Error status disabled.
	On	04	4	Error status enabled.
3	Off	00	0	Paper roll sensor status disabled.
	On	08	8	Paper roll sensor status enabled.
4-7	-	-	-	Undefined.

[Details]	<ul style="list-style-type: none">* If any of the status items in the table above are enabled, the printer transmits the status when this command is executed. The printer automatically transmits the status whenever the enabled status item changes. The disabled status items may change, in this case, because each status transmission represents the current status.* If all status items are disabled, the ASB function is also disabled.* If the ASB is enabled as a default, the printer transmits the status when the printer data reception and transmission is possible at the first time from when the printer is turned on.* The following four status bytes are transmitted without confirming whether the host is ready to receive data. The four status bytes must be consecutive, except for the XOFF code.* Since this command is executed after the data is processed in the receive buffer, there may be a time la between data reception and status transmission.* When the printer is disabled by ESC= (Select peripheral device), the four status bytes are transmitted whenever the status changes.* The status to be transmitted are as follows :
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First byte (printer information)

Bit	Off/On	Hex	Decimal	Status for ASB
0	Off	00	0	Not used. Fixed to Off.
1	Off	00	0	Not used. Fixed to Off.
2	Off	00	0	Drawer kick-out connector pin 3 is LOW.
	On	04	4	Drawer kick-out connector pin 3 is HIGH.
3	Off	00	0	Online.
	On	08	8	Offline.
4	On	10	16	Not used. Fixed to On.
5	Off	00	0	Cover is closed.
	On	20	32	Cover is open.
6	Off	00	0	Paper is not being fed by using the PAPER FEED button.
	On	40	64	Paper is being fed by using the PAPER FEED button.
7	Off	00	0	Not used. Fixed to Off.

Second byte (printer information)

Bit	Off/On	Hex	Decimal	Status for ASB
0	-	-	-	Undefined.
1	-	-	-	Undefined.
2	-	-	-	Undefined.
3	Off	00	0	No Auto-cutter error.
	On	08	8	Auto-cutter error occurred.
4	Off	00	00	Not used. Fixed to Off.
5	Off	00	0	No unrecoverable error.
	On	20	32	Unrecoverable error occurred.
6	Off	00	0	No automatically recoverable error.
	On	40	64	Automatically recoverable error occurred.
7	Off	00	0	Not used. Fixed to Off.

Bit 3 : If these errors occur due to paper jams or the line, it is possible to recover by correcting the cause of the error and executing **DLE ENQ n** ($1 \leq n \leq 2$). If an error due to a circuit failure (e.g. wire break) occurs, it is impossible to recover.

Bit 6 : When printing is stopped due to high print head temperature until the print head temperature drops sufficiently or when the paper roll cover is open during printing, bit 6 is On.

Third byte (paper sensor information)

Bit	Off/On	Hex	Decimal	Status for ASB
0,1	Off	00	0	Paper roll Near-END sensor : paper adequate.
	On	03	3	Paper roll Near-END sensor : paper near end.
2,3	Off	00	0	Paper roll end sensor : paper present.
	On	0C	12	Paper roll end sensor : paper not present.
4	Off	00	0	Not used. Fixed Off.
5,6	-	-	-	Undefined.
7	Off	00	0	Not used. Fixed Off.

Fourth byte (paper sensor information)

Bit	Off/On	Hex	Decimal	Status for ASB
0-3	-	-	-	Undefined.
4	Off	00	0	Not used. Fixed Off.
5,6	-	-	-	Undefined.
7	Off	00	0	Not used. Fixed Off.

[Default] n=0 when DIP SW 2-1 is Off, n=2 when DIP SW 2-1 is On.

GS f n

[Name] Select font for Human Readable Interpretation(HRI) characters.

[Format] ASCII GS f n
Hex 1D 66 n
Decimal 29 102 n

[Range] n = 0, 1, 48, 49

[Description] Selects a font for the HRI characters used when printing a bar code.
n selects a font from the following table :

n	Font
0, 48	Font A (12 × 24)
1, 49	Font B (9 × 17)

GS h n

[Name] Set bar code height.

[Format] ASCII GS f n
Hex 1D 68 n
Decimal 29 104 n

[Range] $1 \leq n \leq 255$

[Description] Set the height of the bar code.
n specifies the number of dots in the vertical direction.

① GS k m d1...dk NUL , ② GS k m n d1...dn

[Name]	Print bar code.				
[Format]	① ASCII	GS	k	m	d1...dk NUL
	Hex	1D	6B	m	d1...dk 00
	Decimal	29	107	m	d1...dk 0
	② ASCII	GS	k	m	n d1...dn
	Hex	1D	6B	m	n d1...dn
	Decimal	29	107	m	n d1...dn
[Range]	① $0 \leq m \leq 6$ (k and d depends on the bar code system used.) ② $65 \leq m \leq 73$ (n and d depends on the bar code system used.)				
[Description]	Selects a bar code system and prints the bar-code. m selects a bar ode system as follows :				

m	Bar Code System	Number of Characters	Remarks
①	0 UPC-A	$11 \leq k \leq 12$	$48 \leq d \leq 57$
	1 UPC-E	$11 \leq k \leq 12$	$48 \leq d \leq 57$
	2 JAN13(EAN13)	$12 \leq k \leq 13$	$48 \leq d \leq 57$
	3 JAN8(EAN8)	$7 \leq k \leq 8$	$48 \leq d \leq 57$
	4 CODE 39	$1 \leq k$	$48 \leq d \leq 57$, $65 \leq d \leq 90, 32, 36, 37, 43, 45, 46, 47$
	5 ITF	$1 \leq k$ (even number)	$48 \leq d \leq 57$
②	6 CODABAR	$1 \leq k$	$48 \leq d \leq 57$, $65 \leq d \leq 68, 36, 43, 45, 46, 47, 58$
	65 UPC-A	$11 \leq n \leq 12$	$48 \leq d \leq 57$
	66 UPC-E	$11 \leq n \leq 12$	$48 \leq d \leq 57$
	67 JAN13(EAN13)	$12 \leq n \leq 13$	$48 \leq d \leq 57$
	68 JAN8(EAN8)	$7 \leq n \leq 8$	$48 \leq d \leq 57$
	69 CODE 39	$1 \leq n \leq 255$	$48 \leq d \leq 57$, $65 \leq d \leq 90, 32, 36, 37, 43, 45, 46, 47$ $d1 = dk = 42(1)$
	70 ITF	$1 \leq n \leq 255$ (even number)	$48 \leq d \leq 57$
	71 CODABAR	$1 \leq n \leq 255$	$48 \leq d \leq 57$, $65 \leq d \leq 68, 36, 43, 45, 46, 47, 58$
	72 CODE 93	$1 \leq n \leq 255$	$0 \leq d \leq 127$
	73 CODE 128	$1 \leq n \leq 255$	$0 \leq d \leq 127$

GS r n

[Name]	Transmit status.			
[Format]	ASCII	GS	V	n
	Hex	1D	72	n
	Decimal	29	114	n
[Range]	$n = 1, 2, 49, 50$			
[Description]	Transmits the status specified by n as follows.			

GS v 0 m xL xH yL yH d1...dk

[Name]	Print raster bit image.									
[Format]	ASCII	GS	V	0	m	xL	xH	yL	yH	d1...dk
	Hex	1D	76	30	m	xL	xH	yL	yH	d1...dk
	Decimal	29	118	48	m	xL	xH	yL	yH	d1...dk
[Range]	$0 \leq m \leq 3, 48 \leq m \leq 51$ $0 \leq xL \leq 255$ $0 \leq xH \leq 255$ $0 \leq yL \leq 255$ $0 \leq d \leq 255$ $k = (xL + xH \times 256) \times (yL + yH \times 256)$ ($k \neq 0$)									
[Description]	Selects Raster bit-image mode. The value of m selects the mode, as follows :									

m	Mode	Vertical Dot Density (DIP)	Horizontal Dot Density (DIP)
0, 48	Normal	180 DPI	180 DPI
1, 49	Double-width	180 DPI	90 DPI
2, 50	Double-height	90 DPI	180 DPI
3, 51	Quadruple	90 DPI	90 DPI

* xL, xH, select the number of data bits ($xL + xH \times 256$) in the horizontal direction for the bit image.

* yL, yH, select the number of data bits ($yL + yH \times 256$) in the vertical direction for the bit image.

GS w n

[Name]	Set bar code width.			
[Format]	ASCII	GS	w	n
	Hex	1D	77	n
	Decimal	29	119	n
[Range]	$2 \leq n \leq 6$			
[Description]	Set the horizontal size of the bar code. n specifies the bar code width as follows :			

n	Module width for multi-level bar code	Binary-level bar code	
		Thin element width (mm)	Thick element width (mm)
2	0.282	0.282	0.706
3	0.423	0.423	1.129
4	0.564	0.564	1.411
5	0.706	0.706	1.834
6	0.847	0.847	2.258

* Multi-level bar codes are as follows :
UPC-A, UPC-E, JAN13(EAN13), JAN8(EAN8), CODE93, CODE128.

* Binary-level bar codes are as follows :
CODE39, ITF, CODABAR.

APPENDIX

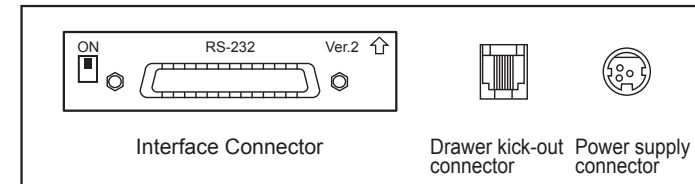
A. Star Mode Command Summary

Control codes	Hexadecimal codes	Function
<ESC> "R" n	1B 52 n	Select international character set
<ESC> <GS> t n	1B 1D 74n	Select character table
<ESC> "/" "1"	1B 2F 31	Select slash zero
<ESC> "/" <1>	1B 2F 01	
<ESC> "/" "0"	1B 2F 30	Select normal zero
<ESC> "/" <0>	1B 2F 00	
<ESC> "b" n1 n2 n3 n4 d1 ... dk <RS>	1B 62 n1 n2 n3 n4 d1 ... dk 1E	Select bar code printing
<ESC> "M"	1B 4D	Select 12-dot pitch printing
<ESC> "p"	1B 70	Select 14-dot pitch printing
<ESC> "P"	1B 50	Select 15-dot pitch printing
<ESC> ":"	1B 3A	Select 16-dot pitch printing
<ESC> <SP> n	1B 20 n	Set character spacing
<SO>	0E	Sets the printing magnified double in character width.
<DC4>	14	Resets the printing magnified in character width.
<ESC> "W" n	1B 57 n	Sets the magnification rate in character width.
<ESC> <SO>	1B 0E	Sets the printing magnified double in character height.
<ESC> <DC4>	1B 14	Resets the printing magnified in character height.
<ESC> "h" n	1B 68 n	Sets the magnification rate in character height.
<ESC> "- " "1"	1B 2D 31	Select underlining
<ESC> "-:" <1>	1B 2D 01	
<ESC> " _ " "1"	1B 5F 31	Select over lining
<ESC> " _ " <1>	1B 5F 01	
<ESC> "4"	1B 34	Select highlight printing
<ESC> "5"	1B 35	Cancel highlight printing
<SI>	0F	Inverted printing
<DC2>	12	Cancel inverted printing
<ESC> "E"	1B 45	Select emphasized printing

Control codes	Hexadecimal codes	Function
<ESC> "F"	1B 46	Cancel emphasized printing
<ESC> "C" n	1B 43 n	Set page length in lines
<ESC> "C" <0> n	1B 43 00 n	Set page length in inches
<ESC> "N" n	1B 4E n	Set bottom margin
<ESC> "O"	1B 4F	Cancel bottom margin
<ESC> "I" n	1B 6C n	Set left margin
<ESC> "Q" n	1B 51 n	Set right margin
<LF>	0A	Line Feed
<ESC> "a" n	1B 61 n	Feed paper n lines
<FF>	0C	Form Feed
<HT>	09	Horizontal tab
<VT>	0B	Vertical tab
<ESC> "z" "1"	1B 7A 31	Set line spacing to 4 mm
<ESC> "0"	1B 30	Set line spacing to 3 mm
<ESC> "J" n	1B 4A n	One time n/4 mm feed
<ESC> "I" n	1B 49 n	One time n/8 mm feed
<ESC> "B" n1 n2...<0>	1B 42 n1 n2 ... 00	Set vertical tab stops
<ESC> "D" n1 n2...<0>	1B 44 n1 n2 ... 00	Set horizontal tab stops
<ESC> <GS> "A" n1 n2	1B 1D 41 n1 n2	Absolute position setting
<ESC> <GS> "R" n1 n2	1B 1D 52 n1 n2	Relative position setting
<ESC> <GS> "a" n	1B 1D 61 n	Alignment
<ESC> "K" n <0>	1B 48 n 00 m1 m2	Print normal density graphics
<ESC> "L" n <0>	1B 4C n1 n2 m1 m2	Print high density graphics
<ESC> "k" n <0> d1	1B 6B n 00 d1	Print fine density graphics
<ESC> "X" n1 n2	1B 58 n1 n2	Print fine density graphics
<ESC> <FS> "p" n m	1B 1C 70 n m	Print NV bit image
<ESC> "&" "1" "1"	1B 26 31 31 n m1 m2 ... m48	Define download character
<ESC> "&" <1> <1>	1B 26 01 01 n m1 m2 ... m48	
<ESC> "&" "1" "0" n	1B 26 31 30 n	Delete a download character
<ESC> "&" <1> <0> n	1B 26 01 00 n	
<ESC> "% " "1"	1B 25 31	Enable download character set
<ESC> "% " <1>	1B 25 01	
<ESC> "% " "0"	1B 25 30	Disable download character set
<ESC> "% " <0>	1B 25 00	
<ESC> <GS> "*" xy	1B 1D 2A 78 79	Definition of download bit image
<ESC> <GS> "/" m	1B 1D 2F 6D	Printing of download bit image
<ESC> <BEL> n1 n2	1B 07 n1 n2	Define drive pulse width for peripheral device #1.
<BEL>	07	Control peripheral device #1

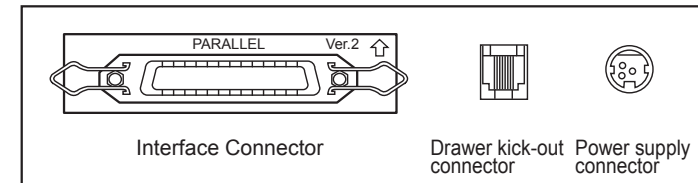
Control codes	Hexadecimal codes	Function
<FS>	1C	Control peripheral device #1 immediately.
	19	Control peripheral device #2 immediately
<SUB>	1A	Control peripheral device #2 immediately
<ESC> "d" n	1B 64 n	Partial-cut command to the auto cutter.
<CAN>	18	Cancel last line & Initialize printer immediately
<DC3>	13	Deselect printer
<DC1>	11	Set select mode
<RS>	1E	Beep the buzzer
<ESC> "@"	1B 40	Initialize printer
<ENQ>	05	Inquiry (Status inquiry)
<EOT>	04	Near end status inquiry
<ESC> "?" <LF> <NUL>	1B 3F 0A 00	Reset printer hardware (Perform test print)
<ESC> "8" n1 n2	1B 38 n1 n2	Registers a logo pattern
<ESC> "9" n1 n2	1B 39 n1 n2	Prints a logo pattern

B. Connectors

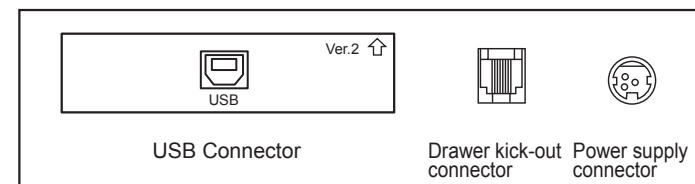


※ When the Dip Switch is "ON" on the Serial Interface Board, DTR and RTS are connected each other.

SRP-350/SRP-350S Connector (Serial Interface)

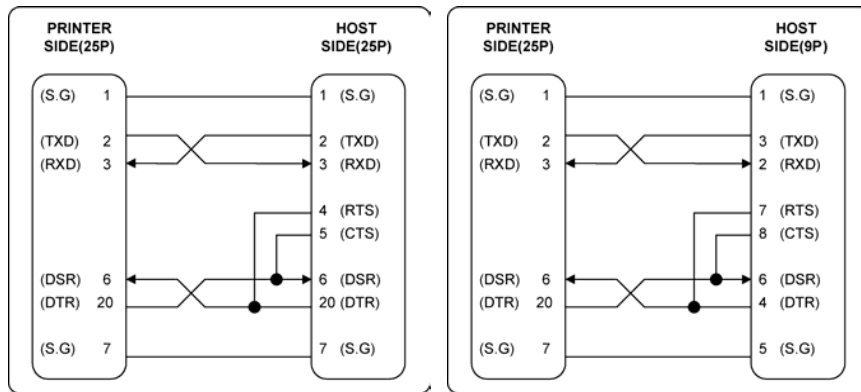


SRP-350P Connector (Parallel Interface)



SRP-350U Connector (USB Interface)

RS-232C Cable Connection

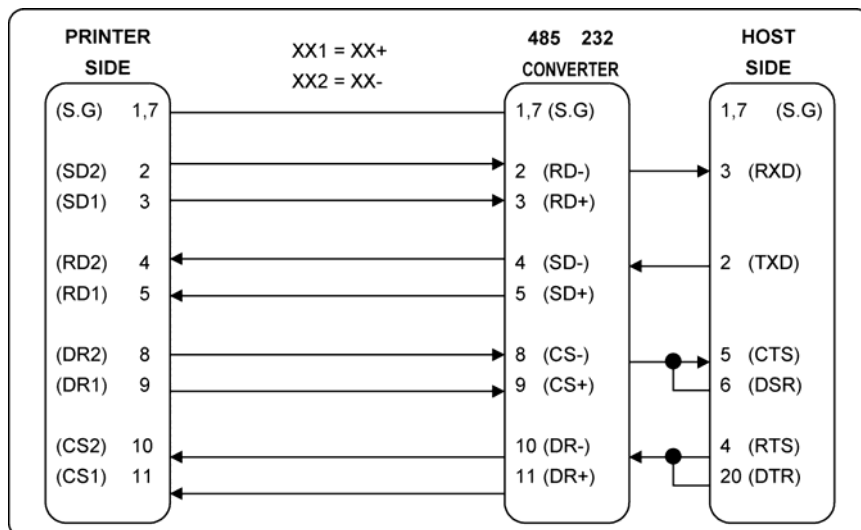


Interface Connector

Serial Interface (RS-232)

Pin No.	Signal name	Direction	Function
1	FG	-	Frame Ground
2	TxD	Output	Transmit Data
3	RxD	Input	Receive Data
4	RTS	Output	Ready To Send
5	CTS	Input	Clear To Send
6	DSR	Input	Data Set Ready
7	SG	-	Signal Ground
20	DTR	Output	Data Terminal Ready

RS-485 Cable Connection



Serial Interface (RS-485)

Pin No.	Signal Name	Direction	Function
1	FGND	-	Frame Ground
2	SD2	Output	Send Data
3	SD1	Output	
4	RD2	Input	Receive Data
5	RD1	Input	
7	SGND	-	Signal Ground
8	DR2	Output	Same as DTR(RS-232)
9	DR1		
10	CS2	Input	Same as DSR(RS-232)
11	CS1		

Parallel Interface (IEEE-1284)

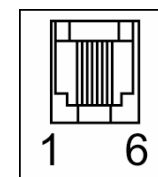
Pin No.	Source	Compatibility Mode	Nibble Mode	Byte Mode
1	Host	nStrobe	HostClk	HostClk
2	Host / Printer	Data 0 (LSB)	-	Data 0 (LSB)
3	Host / Printer	Data 1	-	Data 1
4	Host / Printer	Data 2	-	Data 2
5	Host / Printer	Data 3	-	Data 3
6	Host / Printer	Data 4	-	Data 4
7	Host / Printer	Data 5	-	Data 5
8	Host / Printer	Data 6	-	Data 6
9	Host / Printer	Data 7 (MSB)	-	Data 7 (MSB)
10	Printer	nAck	PtrClk	PtrClk
11	Printer	Busy	PtrBusy /Data3,7	PtrBusy
12	Printer	Perror	AckDataReq/Data2,6	AckDataReq
13	Printer	Select	Xflag /Data1,5	Xflag
14	Host	nAutoFd	HostBusy	HostBusy
15		NC	NC	NC
16		GND	GND	GND
17		FG	FG	FG
18	Printer	Logic-H	Logic-H	Logic-H
19~30		GND	GND	GND
31	Host	nInit	nInit	nInit
32	Printer	nFault	nDataAvail /Data0,4	nDataAvail
33		GND	ND	ND
34	Printer	DK_Status	ND	ND
35	Printer	+5V	ND	ND
36	Host	nSelectIn	1284-Active	1284-Active

USB Interface

Pin No.	Signal Name	Assignment (Color)	Function
Shell	Shield	Drain Wire	Frame Ground
1	VBUS	Red	Host Power
2	D-	White	Data Line(D-)
3	D+	Green	Data Line(D+)
4	GND	Black	Signal Ground

Drawer Connector

Pin No.	Signal name	Direction
1	Frame ground	-
2	Drawer kick- out drive signal 1	Output
3	Drawer open/close signal	Input
4	+24V	-
5	Drawer kick- out drive signal 2	Output
6	Signal ground	-



C. Notes

Paper dust inside the printer may lower the print quality. In this case clean the printer as follows.

- 1) Open the printer cover and remove the paper if exists.
- 2) Clean the print head with a cotton swab moistened with alcohol solvent.
- 3) Clean the platen roller and paper end sensor with cotton swab moistened with water.
- 4) Insert a paper roll and close the printer cover.

The remained amount of paper detected by paper near end sensor varies with the diameter of the paper core. To adjust the remained amount, contact your dealer.

D. Specification

Printing method		Thermal line printing
Dot density		180 X 180 dpi (7dots/mm)
Printing width		72.192 ± 0.2mm
Paper width		79 ~ 80 mm
Characters per line (default)		42 (Font A) 56 (Font B)
Printing speed		35.5 lines/sec(1/6" Feed) 150 mm/sec
Receive Buffer Size		4K Bytes
NOTE : Printing speed may be slower, depending on the data transmission speed and the combination of control commands.		
Supply voltage	Input voltage	120/230 VAC
	Frequency	50/60 Hz
	Output voltage	+24 VDC
Environmental Conditions	Temperature	5 ~ 45 °C (Operating) -10 ~ 50 °C (Storage)
	Humidity	30 ~ 80 % RH (Operating) 10 ~ 90 % RH (Storage) ; Except for paper
LIFE *	Mechanism Head	15,000,000 lines 1x10 ⁸ pulse (Approximately 100 Km)
	Auto Cutter	1,000,000 Cut
MCBF *	Mechanism	37,000,000 lines

* These values are calculated under printing level 2 with recommended paper at normal temperature.

* These values may vary with environment temperature, printing level, etc.

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